PEB

NEWSLETTER

2-98

NEWSLETTER CONTENTS

Senior Member's Comments

The theme of this issue of the PEB Newsletter is training. The key event prompting this issue is the publication of the CINCLANTFLTINST 3540.8B, the Engineering Department Training Program. A summary of changes is included in this issue. We think this instruction is the "crowning achievement in engineering readiness." Of course, we also thought that when we published the CINCLANTFLTINST 3540.9, PEB Assessment and Certification Guide. However, it only took three months before the flood of "constructive criticism" from the fleet assisted us in seeing deficiencies in our guide. It then took us three months to write Change 1 and three months to publish it. We have pre-tested the .8B with a Destroyer Squadron, so hopefully we have maximized understandability and usability. However, as with the .9, the last page is a change recommendation form. Please provide feedback.

A second, and really parallel issue, is that some ships are making the basic phase of the IDTC too hard. We have reviewed the processes of these "hard ships" in detail. The results are not surprising. These ships effectively did not start preparing for CART II until the end of their Availability; when they got behind at CART II, it became painful to try to catch up to the curve. The process must really start at the MCA. This is where the POA&M must be developed for the next cycle. The training must start at the beginning of Quadrant I/the Availability. ATG has been pushing this mentality and I have included, as Tab A of this newsletter, a slide from their current IDTC slide show. Also, the .8B stresses this by supporting the drill refinement program with training in Quadrant I. Finally, the Tab A of Chapter 8 in the .9 is still a good outline/guide for execution of the process (this was one of your .9 change recommendations), and the Process article "FERP Mid-Year Review" provides the latest information.

W. J. Laz

P.S. The goal of PAC-LANT standardization gets closer all the time. You may notice several articles in this issue that were authored by PACFLT PEB members.

Published triannually by the Senior Member of the Atlantic Fleet Propulsion Examining Board as a means to address changes, common problems, and often asked questions from staffs or ships concerning the engineering readiness and certification process. Points of contact for the submission of ideas or articles are: CDR Tom Holman, Managing Editor, and LT Richard Frey, Editor; both at 757-836-0121/0120 or DSN 836-0121/0120, Fax: 757-836-5319.

MANAGEMENT

ENGINEERING PROGRAMS PERIODIC REVIEW SUGGESTIONS

By LCDR Victor V. Cooper, LANTFLT PEB

One month prior to an assessment is the wrong time to start reviewing your administrative programs. The systematic review of all Engineering administrative programs every three months will ensure the effective administration of the programs. Here are some suggestions that have proven to work for Engineer Officers in the fleet.

- Have a Department Head or a Division Officer outside Engineering Department review the program using the ETG checklists.

- Engineer Officers should schedule the reviews on their Long Range Training Plan. Ensure it is discussed and scheduled during Planning Board for Training (PBFT).

- Ensure training is held for any short comings identified in the review.

Some advantages of someone outside the Engineering Department reviewing the programs are:

- They are impartial.

- They will ask questions and want to see things that someone in Engineering Department will assume exist or are occurring.

- Their review provides a focus for the program administrators because someone outside of Engineering (other than PEB/ETG) is reviewing the program. It also provides Command attention to the program when scheduled.

Engineering Department personnel should not feel slighted by the prospect of another department looking into their “sneakers”. The idea is to ensure administrative programs are managed in accordance with the required instructions, directives or technical manuals. This approach is just as applicable to other departments.

MANAGEMENT

LUBE OIL QUALITY MANAGEMENT

By LCDR Sam Overmyer, LANTFLT PEB

Ref: (a) COMNAVSURFLANTINST 3540.22
(b) NAVAIR 17-15-50.1

In accordance with ref (a), ships must submit NOAP samples as required by PMS. Too often the LOQM Program of a ship is evaluated as not effective due to not complying with the requirements of the oil analysis program.

Although ref (b) is a NAVAIR instruction, the comments apply to surface ships. The following are excerpts taken from ref (b): The stated purpose of the oil analysis program is to detect changes in the condition of used oil, to detect unusual wear, and to predict impending equipment failures. An effective oil analysis program can also enhance maintenance workload planning by early identification of unscheduled maintenance requirements and result in improved maintenance procedures as a result of oil analysis feedback information. Feedback is an extremely important element of the oil analysis program. Feedback from the oil analysis process provides the basis for improved troubleshooting assistance from the supporting laboratory as data are compiled relating sample results to a particular component that may be generating abnormal wear metals. This process ensures that the criteria applied to detected oil condition changes are more accurately related to actual equipment condition, thus reducing the possibility of premature, unwarranted equipment removals from service, while ensuring that criteria levels are low enough to ensure equipment is operating safety. Probably the most important element of the feedback system to the customer is the laboratory recommendation for maintenance action following analysis of the customer’s oil sample. It is the customer’s responsibility to decide what action to take in regard to any recommendation from the NOAP lab.

The NOAP lab is there to help the ship. The ship's (customer's) responsibilities include: establishing a system of internal accounting/record keeping to ensure that all samples for equipment entered in the oil analysis program are taken correctly and on time in accordance with applicable directives, ensuring that all samples are correctly identified with accompanying paperwork correctly completed, ensuring that all samples are expeditiously forwarded to the supporting oil analysis laboratory, ensuring that a timely response is made to laboratory requests for samples or laboratory recommendations for maintenance actions, and ensuring that prompt and complete feedback is provided to the laboratory concerning any condition or maintenance action that may affect the condition of the equipment's oil system.

Results for a failed or questionable lube oil sample will be sent to the ship via message within 24 hours. Results for samples which are evaluated as normal will be sent to the ship in a quarterly report.

It is recommended that you get the telephone number of your laboratory. If you have any questions or concerns, call and get things straightened out. If there remains a problem call the NOAP Program Manager, Ms. Elizabeth H. Lurton, Comm. (850) 452-3175/6 Ext. 123, DSN 922-3175/6 Ext. 123. She has all the answers and is very helpful.

Remember the oil analysis laboratory is there to help you. It is your responsibility to manage an effective NOAP Program.

MANAGEMENT

QUALITY ASSURANCE
by LCDR Carl Weicksel, LANTFLT PEB

Ref: (a) CINCLANTFLT/CINCPACFLTINST 4790.3, Chg. 1, Vol. 5
(b) COMNAVSURFLANT msg DTD 200100Z MAY 98

A reoccurring discrepancy noted during Quality Assurance Program assessments is that ships have chosen to generate their own FWP Approval Sheet instead of using the one provided in ref (a). This in itself is not a discrepancy, however we have noticed that self generated FWP Approval Sheets often omit signature blocks for key personnel in the FWP approval and revision "Chain of Command". A copy of the FWP Approval/Revision Sheet is provided in this newsletter as Tab C. I encourage you to use it. Additionally, ref (b) was transmitted to provide clarification and guidance for SURFLANT activities in determining the need for a FWP and replaces the list found in ref (a), part 1, chapter 1, paragraph 1.3.5. Feedback from the fleet indicates some confusion in the intent of a note included in the message stating; "this guidance applies to FWPs used in controlled work packages". This note simply means a FWP will be developed and used for maintenance actions involving CWPs as required by chapter 3 of part II of ref (a). COMNAVSURFLANT requires all activities to place a copy of this message in the front of ref (a). If you don't have a copy of it, get one. If you can't get one, call me.

MATERIAL

"THE DEVIL IS IN THE DETAILS"
by CAPT W. J. Laz, LANTFLT PEB

I've enclosed this short article from the Safety Center's FATHOM magazine to make a point.

OUTTA SIGHT, OUTTA MIND
By LCDR Dennis A. Dammann,
Naval Safety Center

"The easy ones we'll do today; the hard ones we'll do later." Such decisions guide the actions of too many engineering personnel when it comes to valve maintenance. In most cases, "later" never comes.

Invariably, safety surveyors find that if the valves are easy to get to, they are well maintained. If they're in hard-to-reach locations, they're neglected. Some of the most notoriously neglected valves are found in the bilges, shaft alleys, and a snipe's favorite place-- the "snake pit."

When we look at your valves during a safety survey, we're considering two aspects: do they work, and do they leak? The last thing you need during an engineering or flooding casualty is a frozen valve, one that leaks like a sieve, or one that requires vice grips to turn it because the handwheel is missing. We've lost count of the number of valves that are painted over and ones that are rusted open or shut.

What does it mean when the pressure on an eductor-suction gauge equals firemain pressure, and the valves are shut? You have valve-seat leak-by, and if an operator ever forgets to secure the eductor, your damage-control team probably will have to dewater the space. Just as the in-port fire party from a ship that had a deteriorated firemain-supply valve and improper valve line-up. The food and consumables ruined by seawater cost $15,818 to replace.

As the crew aboard another ship learned, valve leak-by and poor material condition also will cause flooding. Their problems started with leaking valves (firemain-actuating valve, eductor-suction valve, and suction-check valve). Another problem was a corroded valve stem on a space manifold. The unwanted discovery of water in the chain locker was made by a sounding-and-security watch.

Valve maintenance should be part of your daily routine, and you shouldn't put those out-of-sight hard-to-get-to valves out of your mind. What level of risk are you accepting when your valves won't operate as designed? Don't wait to find out the hard way.

The point is that too many small deficiencies are being ignored until it becomes a big problem. It is not a lack of self assessment ability problem; it is a management problem. We manage crisis-to-crisis and not for success (i.e. steady strain). The primary reason for this management deficiency is that many ships are not following the direction provided by Article 4503 of the EDORM. This article is worthy of your review.

Editor's Note: Article 4503 of the EDORM comes under propulsion plant material readiness, cleanliness, and preservation and specifically addresses material self assessment.

MATERIAL

FAIRBANKS-MORSE DIESEL ENGINE GENERATORS

By CWO4 S. Jemison, PACFLT PEB

Ref: (a) Colt Industries Memo dtd May 18, 1988
(b) Phonecon NAVSSES Rep, Liem Nguyen; Comm: (215) 897-7281

During a recent ship visit, the Fairbanks-Morse Diesel Engine Generator Set had a questionable amount of return fuel leak-off (a near solid stream of fuel) observed in the fuel pump and injector leak-off drain piping. Onboard documentation did not specify the allowable leak-off rates for the Fairbanks-Morse engine. Based on information provided by ref (a) and verified by ref (b), the following allowable leakage rates are provided:

a. The leakage at the pump drain fittings on a engine with a 5/8" plunger diameter, running at 900 RPM, at full load should not exceed 100 ml per hour per pump.

b. The leakage rate at the nozzle leak-off fitting of an engine with gasket type or gasketless pintle nozzles running under the same conditions should not exceed 90 ml per hour per nozzle.

c. Engines with 1/2" plunger diameter and/or running at lower RPM should probably have lower leakage rates than those shown above.

Since most Fairbanks-Morse engines are 12 cylinder with two pumps and nozzles per cylinder, a total leakage rate of approx. 4.5 liters per hour is acceptable. Converting liters to gallons, this amount equals approx. 3.96 qts (1 gallon) per hour per engine. Most fuel pumps and nozzles are piped into two (2) common drains which run down each side of the engine, thus an approx. total of 1/2 gallon per side per engine might be possible. While the allowable leakage rate for any given side is approx. 1/2 gallon per side, there is a maximum allowable

leakage rate per pump or nozzle per hour. The potential for all leakage on one side to be coming from one or two cylinders cannot be discounted. Ships should carefully monitor leakage rates and identify and correct the individual contributors as soon as possible.

If a questionable leakage rate is identified, the ship should identify which pumps or nozzles are leaking and correct individual components leakage rates which are not within allowable tolerances.

MATERIAL

LUBE OIL SERVICE PUMPS

By LT L. Yepez, PACFLT PEB

During a recent FFG visit, it was noted that the lube oil service pumps rotated in the reverse direction following pump shut down. The problem was that lube oil was slipping by the check valve and draining to the sump. As a result of this loss of lube oil in the pump discharging piping, it would take between 20 seconds to 1 minute for the lube oil pumps to draw the oil out of the MRG sump and start pushing lube oil to the MRG. Initially the problem would appear to be faulty check valves, but after further investigation the problem was isolated to a faulty unloading valve. A bent stem on the system unloading valve was the source of the problem. It was preventing the system to maintain pressure when the pumps were shut down thus causing the pump check valves to not fully close under back pressure.

TRAINING

THE .8B

By CAPT W. J. Laz, LANTFLT PEB

The following is a brief summary of changes to the Engineering Department Training Program for Conventionally Powered Surface Ships and Aircraft Carriers, CINCLANT/PACFLTINST 3540.8B.

1. The most noticeable change is that the construction of the instruction is now similar to the Type Commander's EDORM and the PEB Assessment Guide. All guidance and requirements for a specific subject are located in a single section or Tab. The detailed Table of Contents should make the instruction a more effective reference tool.

2. Chapter 1, Section 1 discusses the philosophy of the program and includes duties and responsibilities. The section on the Engineering Training Officer (ETO) has been expanded.

3. Chapter 1, Section 2 provides all information required for quadrant selection. Also, the definition of an operating month has been changed to 100 hours.

4. Chapter 1, Section 3 summarizes training program elements, record keeping, and includes a new section on training program self-assessment.

5. Chapter 2 contains a detailed Tab for each program element. Some of the highlights include:

a. Tab D: Missed training procedures and recording of training.

b. Tab E: Minimum levels of evolution performance are required to maintain watchstation proficiency. Watch Team (new, not watchstation) evolution training.

c. Tab F: The TYCOM's drill refinement methodology is incorporated. The drill validation matrix has been removed. Ship procedures for drill evaluation and grading return. Criteria is provided to aid in drill evaluation. The requirement that all drills be completed in quadrant I (by actual performance, watch team seminars, or evaluated walkthroughs). This is new and supports the TYCOM/ATG desire to start early for lower pain with a steady strain.

d. Tab H: Better defines reestablishing proficiency and documentation of UI watches.

6. Chapter 3 Tabs are devoted to training program support. Highlights include:

a. Tab A: Conducting Seminars. This is new to engineering training in that seminars are watchstander role playing not lectures. This will be extensively used to complete quadrant I drills.

b. Tab C: A new section with terms of reference and definitions.

c. Tab D: Currently not completed. However, the training program automation contract is working and the product should be available this year.

The updated 3540.8B was designed to accomplish the same goals as its predecessor, but be more straight forward and efficient. Please contact us with any questions. In future newsletters, we will publish the question and answer of those with wide-spread fleet interest.

TRAINING

TRAIN SMARTER NOT HARDER

By CAPT R. D. Liggett, PACFLT PEB

Ref: (a) CINCLANTFLT 3540.8B

PEB has the opportunity to observe many good ideas and some not so good ideas in the area of training. Ten years ago, an active Engineering Training Program consisted primarily of only one thing, a repetitive program of casualty control drills. Many Engineer Officers even had a rule of thumb on how many drills must be accomplished to properly prepare for the Operational Propulsion Plant Examination (OPPE), and readiness for this big event was calculated by the number of drills left to perform. Despite the tremendous training program features of reference (a), there still remain today many engineers who rely on brute force repetition rather than smart training. Let's review some ways to be smarter. For this review, gas turbine generator casualty control will be used to illustrate a smarter approach.

The first step in an effective training program is to establish a solid base of knowledge in fundamentals. For the ship's service gas turbine generator (GTG), the following lesson topic guides (LTG) are available via the ATGLANT Electronic Bulletin Board:

- Gas Turbine Generator Enclosure, Intake, and Reduction Gear (GS07)
- Allison 501-K17 Gas Turbine Engine and Operation (GS08)
- Waste Heat Boiler Construction and Operation (GS09)
- Waste Heat Boiler Steam, Feedwater and Condensate Systems (GS10)

These detailed lesson topic guides are intended to be used in training both supervisory level and component level watchstanders.

Step two is to reinforce the classroom training by conducting meaningful deckplate training. Evolution training provides a tremendous opportunity for doing so. During evolution training, individuals designated by the Engineer Officer closely scrutinize plant watchstanders in executing procedures from the EOP portion of EOSS, PMS actions, and any other actions designated by the Engineer Officer as events that pertain to a specific watchstation. The master list of these events is contained in the Evolution Training Matrix. Results of evolution observations are formally recorded on an Evolution Evaluation Form (EVEF). The EVEF can very conveniently be used to also report any material discrepancies noted during evolution performance, especially during a GTGI. The carefully selected individuals who have been designated to witness evolutions should use this formal training opportunity to follow up on classroom training; EOP/PMS steps can be used to discuss the reasons behind a procedural sequence, systems interrelationships, safety precautions, etc. Evolution training is the ideal time to build a solid foundation and develop understanding of more complex plant operations such as casualty control.

The third step is proper and specific preparation for casualty control training. Once again, the LTG bank provides materials that support classroom training:

- SSGTG Casualty Control (GC02)
- WHB Casualty Control (GC03)
- SSGTG Casualties for ECCTT (sic) (TT14)

Note, this last LTG is intended to train the Engineering Training Team in how to realistically impose several of the more critical electrical casualties. Classroom training, which should include well designed seminars, ties together casualty causes and symptoms with controlling actions. A necessary aspect of casualty control preparation training must be the potential dangers involved which reinforce the need and reasons for specific controlling actions.

The fourth step in casualty control training is deckplate performance. Watchstanders should by now be primed for getting the most out of realistic training as imposed by the training team. What casualties should be drilled? Recently, there was a significant effort put into refining casualty control training through the designation of the more important casualties as "core" casualties and all remaining casualties as "electives." The core casualties were assigned as such due to their greater potential for occurrence and/or greater potential for damage if not properly controlled. These are the casualties that constitute the minimum group that watchstanders must be proficient in handling. GTG casualties were intentionally selected for purposes of this discussion because there has been much talk of how excessive cycling of this equipment, as is done in traditional casualty control training, may adversely impact material readiness. While a direct correlation has not yet been supported by the technical community, cycling of equipment can be minimized through better use of training targets of opportunity. Every planned shutdown of machinery should be used as an opportunity to do casualty training as should starts and stops associated with maintenance checks. For those ships in San Diego, maximum use should be made of the ATG gas turbine plant training devices.

Hopefully, this article has provided some ideas on how to be smarter in casualty control training through proper preparation. The goal is to make drill periods as absolutely meaningful as possible so that reliance on rote repetition becomes a thing of the past.

Editor's Note: The phone for the ATG Bulletin Board is (757) 445-2786/2497/6565.

TRAINING

BEST PRACTICES

By CAPT W. J. Laz, LANTFLT PEB

We recently assessed a diesel ship which had a very high documented completion rate for drills/evolutions AND displayed a commensurate high level of proficiency on the deckplates. This ship had an unusual "best practice." Every inport Thursday was "underway" training day. While they were not able to "fast cruise" every Thursday, they were always able to schedule some sort of effective training. While it helped the crew to maintain proficiency, it was most beneficial to the ETT; allowing them to improve their proficiency and level of knowledge with a steady strain.

TRAINING

AN AREA OF CONCERN

By CAPT W. J. Laz, LANTFLT PEB

We have observed some ships recently that have not had the superlative ETTs that we routinely see at ECERT. The following are some of the common weak links:

a. The drill scenario has not been rigorously reviewed in that not all appropriate symptoms were disclosed by ETT; and of the indications provided, they were not provided at all local and remote locations.

b. The ship did not train the way it would fight in that cotton jacketed hoses were not charged and dead front fuzes were not pulled when appropriate.

c. Props were extremely simplistic such as one green rag simulating a 200 gpm firemain rupture or verbal disclosures.

This has been an area where the process had really improved since the FERP started. Hopefully, the ships referenced above were just anomalies.

TRAINING

WRITTEN EXAMINATIONS
MOST FREQUENTLY MISSED QUESTIONS

A review of written examinations administered over the previous quarter was recently completed. The three most frequently missed questions for each propulsion type are listed below, with corresponding answers. When the question/answer is ship class specific, the class is indicated in parenthesis.

DIESEL

Q: What is the pressure setting for the MPDE lube oil pump relief valve?

A: Ship provide answer/ship specific.

Q: In the CPP system, what is the setting of the hub high oil temperature alarm? (MCMs)

A: 140 Degrees Fahrenheit.

Q: What are the RPM and pressure set points for the auto start cycloidal propeller control oil system electric standby pump? (MHCs)

A: 22 RPM or 882 PSI.

GAS TURBINE

Q: Define the terms "lower explosive limit" and "upper explosive limit."

A: A flammable gas or the flammable vapor of a liquid has to mix with air in the proportion to make an ignitable air-vapor mixture. The smallest percentage of gas (or vapor) that will make an ignitable mixture is called the lower explosive limit. The greatest percentage of a gas (or vapor) that will make an ignitable mixture is called the upper explosive limit.

Q: How do you know an EEBD is safe to use?

A: The bag is vacuumed-sealed and the moisture indicator is light blue.

Q: The Woodward governor controls engine speed electronically using speed sensed by a _____ on the drive shaft of the GTG.

A: Magnetic pickup.

STEAM

Q: When operating a turbine generator, you should determine periodically the temperature of the oil leaving the bearings. What is a satisfactory temperature for this oil?

A: 120-180 degreed Fahrenheit with no temperature greater than 50 degrees above the lube oil cooler outlet temperature.

Q: Describe the conditions for operating the main circulating pump.

A: The ahead speeds for which the Main Circ Pump should be required shall be determined by the ship's POG. (The answer should also include all astern speeds, maneuvering combinations and inport steaming modified main.)

Q: The pressure actually shown on the face of a gauge (at or above atmospheric pressure is called what?

A: Gauge pressure (PSIG).

OPERATIONS

EDORM

By LT Richard Frey, LANTFLT PEB

The new joint CNSL/CNSP EDORM is on the streets, and commands were required to have it fully implemented by 01JAN98. There are numerous changes that have been made. This article is not intended to cover all of the changes, but rather to highlight a few of the significant areas. This article will also address the shortfalls that PEB has seen in the implementation of the new EDORM in the Fleet. Engineer Officers and key personnel within the department must carefully review the new

EDORM and ensure that their department is operating within it's guidelines.

The new EDORM provides a lot of useful, advisory type guidance which is interspersed among the numerous mandatory actions that are covered by the instruction. Close attention must be paid to the wording in order to differentiate between advisory and mandatory items. Mandatory items are specified with explicit directive words such as "must, will and shall." Advisory items are identified by suggestive words such as "may, can, should and could."

Article 3205 of the EDORM discusses information that shall be included in the Engineering Department 8 O'Clock Reports. This section also lists additional information that may be incorporated into 8 O'Clock Reports in order to keep the chain of command better informed as well as to serve as an excellent management tool.

Article 3206 provides a list of topics that must be covered by the Engineer Officer's Standing Orders.

Article 3303 covers special evolutions. Due to operational risk, additional planning, supervision, and safety precautions that are associated with special evolutions, special evolutions (as specified in the EDORM) shall not be conducted in the propulsion plant without the knowledge of the Engineer Officer and the approval of the Commanding Officer. The requirements listed in the EDORM for conducting these evolutions are very specific.

Throughout the Fleet, we are seeing that many ships have not completely implemented the new EDORM. In particular, many ships have not incorporated the changes in the articles listed above.

FIREFIGHTING

MAIN SPACE FIREFIGHTING TRAINING

By CAPT J. R. Miller, LANTFLT PEB

Lately, too many ships have demonstrated problems with their ability to extinguish a Main/Auxiliary Space Class "B" fire. These problems are driven by a number of factors, including failure to train personnel on the requirements of NSTM 555 and the ship's Main Space Fire Doctrine, poor demonstration of fundamental firefighting and damage control skills, and poor command and control. Ships that train to their doctrine and emphasize fundamentals do well. Using the following framework as a basis for firefighting training may help improve performance.

Break the drill into five parts: (1) Initial Actions, (2) Evacuation, (3) Space Reentry, (4) Firefighting, and (5) Post Fire Actions. Each of these parts can be further reduced to specific steps in order to focus training on fundamentals.

(1) Initial Actions (Space Watchstanders)

- Reporting of the leak.
- Effective deflection of the flammable liquids leak away from heat sources and electrical components.
- Isolation of the leak.
- Use of installed firefighting systems to flush flammable liquids into the bilge.
- Once the fire is initiated, utilizing installed AFFF and portable PKP to aggressively fight it, attempting to prevent it from going out of control.
- Making reports as appropriate.

(2) Evacuation

- Once, for drill purposes, the fire is put out of control, making reports to that effect.
- Utilizing installed firefighting equipment and portable PKP to cover watchstanders while moving to the nearest exit.
- effective utilization of SEEDs while backing out.
- Donning of EEBDs where appropriate to assist in escape from the space.
- Activating Halon and installed Bilge Sprinkling Sstems.
- Verifying activation of both systems.

- Ensuring cutout valves for the in-space AFFF hosereels are shut.
- Making required reports to the On-Scene Leader, Locker Officer and EOOW/DCA.

(3) Space Reentry (Which includes all supporting command and control efforts)

- Rapid setting of General Quarters (or DC Quarters, as appropriate) and material condition "Zebra."
- Establishing communications between DC Central, Repair Lockers and the Scene.
- Effective employment and coordination of investigators.
- Dressing out the fire party, including such things as warming up the NFTI.
- Effective turnover between the EOOW and the DCA.
- Setting of fire boundaries.
- Setting of smoke boundaries (including setting negative or positive ventilation as required by the ship's doctrine).
- Mechanical isolation (including validation of isolation lists and training of the space isolators as to exactly how to go about executing their responsibilities).
- Determining Halon effectiveness (particularly investigators).
- If Halon is bad, determining why and utilizing secondary (reserve) Halon, if available.
- Lighting-off OBAs (both methods).
- Hose handling coordination.
- Accessing of the space (generally not as simple or as smooth as it sounds).
- Utilizing AFFF bilge sprinkling prior to reentry.

(4) Firefighting

- Entering the space (testing deckplates and ladders).
- Utilizing the NFTI to help find the fire.
- Effectively surveying the space.
- Hose handling (spacing of hose handlers).
- Establishing effective communications by using all available means.
- Effective firefighting techniques.
- Effectively employing either one or two hose attack as required by ship's doctrine.
- OBA management.
- Setting a proper reflash watch.

(5) Post Fire Actions (Generally the weakest area we see in firefighting)

- Rapid surveying of the seat of the fire by the Attack Team Leader.
- Determining the extent of AFFF coverage in the bilges.
- Overhauling (from outside in, using a means of protecting the overhaul team by use of either installed or portable AFFF).
- Removing of flammable liquids.
- Desmoking (utilizing the most effective method in accordance with the ship's doctrine).
- Atmospheric testing.
- Plant restoration.

This list is not meant to be either all-inclusive or limiting. It represents a methodology for breaking the Main Space Fire Doctrine up into "small bites" for ease of training. Once the fundamentals (many of which can be done in either a seminar environment or on the deckplates) are mastered, then begin to integrate them in larger and larger segments. It also helps to explain to the sailors on the deckplates the "why" behind each part of this training. That way, in an emergency, if they have to improvise, they can, based on the full knowledge of what it is they are doing.

Also remember, your Main Space Fire Doctrine has a detailed list, in fact a checklist, of requirements that could be used just as effectively to train your firefighting team as the method provided here.

THE PROCESS

FERP MID-YEAR REVIEW

By CAPT W. J. Laz, LANTFLT PEB

Based on recent IG and Flag briefs I have conducted, it seemed appropriate to put out a mid-year status on the FERP. Below are the most common questions.

A question frequently asked **is** whether the **FERP is better than the OPPE process?**

The improvement in the area of operations has been a high point. For a selected period in the OPPE process, the drill success rate was

about 69%; for a comparable period during FERP it was about 81%.

While a 12% improvement by itself is good, it should be pointed out that the level of drills now being run at ECERTs are more challenging than those run during OPPE. This makes the 12% improvement even more impressive.

The area of material has not shown a parallel level of improvement. The about 6% failure rate during the OPPE period was comparable to the about 6% not ready rate of the comparable FERP period.

However, there are two perturbations that cloud this statistical comparison. First, if the OPPE certification criteria were used at ECERT, the not ready rate would be about 14%. Second, however, if the cannibalization and fly-away teams were used, as in the OPPE process, the not ready rate would be about 9%. Bottom line: There has been some small degradation in material readiness.

Another question **is what can we do to make the Interdeployment Training Cycle (IDTC) more efficient?** The IDTC is too hard.

I am not a supporter of the IDTC being too hard. We have seen several ships at CART II that we have recommended for an immediate follow-on ECERT, but so far only one ship has accepted our offer. Based on process review of these "easy" ships, we made up the following "slide."

The **Inter Deployment Training Cycle** Battle

- Ships must start IDTC preparations early enough (at MCA).
- A POA&M must be in place at the start of the availability.
- TYCOM must ensure the length of the availability is long enough for the ship and the shipyard to realistically complete work.
- Non-technical work (e.g. bilge preservation, fire watches) that detracts from training and ship's force maintenance should be contracted out.
- All must ensure the work is completed on time, at PCD.
- The availability is not complete until all QA (both SY and non-SY) and operational checks (e.g. sat set of hot checks) are closed out.
- There must be ship's time between the availability completion and CART II (e.g. at least 3 weeks).

** **Bottom line:** The battle of the IDTC is won or lost between the MCA and CART II. **

The final question **is why are ships being found not ready?**

It can be summed up in two words preparations and standards. This became surprisingly clear as we conducted a process review of our "hard" ships. The "slide" below illustrates this point.

Why "Not Ready"...?

Process review finds the reasons to be:

- for **Material**-

- Preparations: self-assessed equipment checks not done (e.g. observed hot checks) to find and correct problems.

- Standards: accepting out of parameter readings and operations (e.g. unsat PMS and fuel leaks).

- for **Operations/Firefighting-**

- Preparations: drills not routinely conducted (e.g. only one MSFD done before CART).

- Standards: ship's ETT accepting substandard watch team performance (e.g. incorrect or unsafe actions).

THE PROCESS

PREPARATIONS ARE THE KEY
By: W. J. CAPT Laz, LANTFLT PEB

The number one reason two-thirds of the ships completing CART II do not have a "ready to train" status is that they are not able to satisfactorily demonstrate minimum standard equipment. Attached as Tab B is an ISIC message on CART II that perfectly lays out the keys to successful CART II material checks.

THE PROCESS

MATERIAL CHECKS
by LCDR D. A. Fuller, LANTFLT PEB

The Propulsion Examining Board Assessment and Certification Guide provides a representative list of material checks for general equipment, and specific equipment for each of the three major propulsion types. The lists are not all inclusive, however. Each ship is responsible to ensure all checks for their specific equipment have been identified, the correct documentation to demonstrate the checks are held, and knowledgeable personnel with appropriate procedures, tools and test equipment are assigned to conduct the checks.

If you are in doubt as to whether your master list of material checks is "complete", your first step should be contacting your local ETG. They will normally have a tailored, and continuously updated, master listing of material checks for your ship class. Even if you are certain your listing is all inclusive, you may find the format of the ETG listing to be more user friendly for the orchestration of the checks. If you are still in doubt, or have related questions, contact your Project Officer at PEB.

Material checks are demonstrated in accordance with Engineering Operational Procedures (EOP), Planned Maintenance System (PMS), equipment specific maintenance manuals, general technical manuals (NSTM series), or locally prepared procedures (in that order of precedence). It is critical that some sort of tickler is in place to update the procedures in your material checks folders, as the source documents are revised. For instance, ensure your PMS Program Manager replaces MRCs if the latest SFR contains changes. The same applies to the EOSS Program Manager for checks demonstrated in accordance with EOP.

All too often, the folders are placed in a file cabinet in the log room for much of the training cycle, then "dusted off" just before they are required to be used. A quick review in conjunction with evolution evaluation or performance of scheduled PMS will help ensure material check folders are continuously updated, and lessen the administrative "crunch" immediately prior to a training or assessment visit.

Frequent revisiting of material checks at logical junctures will also keep key items such as calibration of test equipment, training of personnel (including shipboard gauge calibration qualifications when required), and proper operation and calibration of sensors and indicators on the front burner.

Each ship should be prepared to conduct all checks in a professional, well-choreographed manner, with the flexibility to allow for material problems that may arise while conducting the checks.

For CART II, the PEB Project Officer will provide the Chief Engineer with the list of representative material checks that the space assessors will observe. Additional checks will be performed at the request of PEB, especially if needed to achieve minimum equipment requirements. Chief Engineers should provide the list of required checks to their coordinator and deck plate personnel immediately, in order to plan the most efficient demonstrations possible.

Use of non-engineering personnel to assist as tiger team members to assist in correction of material discrepancies, fire party members for assistance in demonstration of damage control equipment, and acting as recorders for the material checks coordinator have been observed to significantly contribute to the successful completion of checks on well-organized ships. Submitting a job to your local SIMA for additional calibration personnel and test equipment can also provide an additional safety net to insure success.

Successful completion of material checks including correction of material problems that may arise, in a timely manner, really helps give the ship a head start out of the gate at CART.

Editor's Notes:

(1) Ship's should ensure that all test equipment and extension cords that are required to complete material checks have current electrical safety checks.

(2) Material checks that are completed during a "HORSE" visit will be taken into consideration by PEB when developing the list of material checks to be completed during a CART II assessment; however, some of these checks may be repeated during CART.

THE PROCESS

WHAT IS AN IOP?
By CDR T. D. Holman, LANTFLT PEB

Ref: (a) CINCLANT/PACFLTINST 3540.9

During recent assessments, there have been questions regarding "Items of Priority" (IOP). What are IOPs, who can assign an IOP, and what criteria is used in identifying an IOP? As stated in ref (a), any assessment/certification may identify Items of Priority for which the ship requires extraordinary assistance, or where a class problem is suspected. Identification criteria may include:

- Design, supply support, manning, technical documentation, material reliability, or component operating procedures that are either in conflict with technical directives or require clarification.
- A technical problem exists or is discovered that the ship has not succeeded in resolving.
- EOSS revalidation/configuration is required.
- Material deficiencies that require significant outside assistance to correct.

This criteria applies to all conventionally powered commissioned ships in the Tactical Training Strategy (TTS), to include Propulsion Plant Training Facilities (Hot Plants) and forward deployed Tenders. The Senior Assessor, during the course of an assessment, makes the final determination as to whether an IOP is appropriate.

Both your ISIC and TYCOM monitor the status of Items of Priority. Items of Priority must be corrected or resolved expeditiously and will be reviewed by the PEB during the next assessment.

TAB B

RTTUZYUW RULYSGG5056 1271644-UUUU--RUCBPEB
ZNR UUUUU
RULYVKA T COMPHIBGRU TWO
R 071644Z MAY 98 ZYB PSN 139772L29
FM COMPHIBGRU TWO//N4//
TO PHIBGRU TWO AFLOAT COMS
INFO RUCBPEB/LANTFLT PEB NORFOLK VA//JJJ//
RUCOBRO/COMAFLOATRAGRU NORFOLK VA//00//ETG

BT
UNCLAS//N03540//
MSGID/GENADMIN/COMPHIBGRU TWO/N4//
SUBJ/ENGINEERING HOT CHECK DEMONSTRATIONS FOR CART II//
REF/A/DOC/CINCLANTFLT INST 3540.9 CH1/-//
REF/B/DOC/COMAFLOATRAGRULANT INST 3502.4 VOL 1/-//

NARR/REF A IS PEB ASSESSMENT AND CERTIFICATION GUIDE. REF B IS ETG BASIC PHASE OF TRAINING HANDBOOK//
POC/R COLES/LT/TEL 445-1017 EX 1013/STEAM ERAT OIC//
RMKS/1. TO ASSIST SHIP'S ENGINEERING DEPARTMENT IN PREPARING FOR, AND SMOOTHLY EXECUTING CART II, THE FOLLOWING GUIDELINES FOR CONDUCTING HOT CHECK DEMONSTRATIONS ARE SUGGESTED:
A. DEVELOP HOT CHECK FOLDERS FOR EACH CHECK LISTED IN REF (A). ENSURE EACH FOLDER HAS THE MOST RECENT DOCUMENTATION (IE PMS, TECH MAN, ETC.)
B. ASSIGN A SPECIFIC OPERATOR FOR EACH PIECE OF EQUIPMENT. THE ASSIGNED OPERATOR SHOULD BE A SUBJECT MATER EXPERT FOR THAT EQUIPMENT. WHO IS WELL VERSED IN THE PROCEDURES FOR CONDUCTING THE CHECKS AND SHOULD HAVE PERFORMED THE CHECKS NUMEROUS TIMES PRIOR TO CART TO ENSURE PROFICIENCY.
C. DEVELOP A SEQUENCE OF EVENTS FOR CONDUCTING MULTIPLE CHECKS AT ONE TIME. IN THE EVENT THAT A PIECE OF EQUIPMENT FAILS A CHECK, BE PREPARED TO MOVE ON TO ANOTHER CHECK.
D. DEVELOP A SEQUENCE OF EVENTS FOR MULTIPLE CHECKS ON STAND ALONE EQUIPMENT (IE SSTG'S, MFP'S, EDG'S, SSDG'S AND MPDE'S) AND THEIR ASSOCIATED SYSTEMS.
E. REVIEW TAG OUT REQUIREMENTS, HAVE THE TAGS AND SHEETS FILLED OUT AND VERIFIED PRIOR TO THE ARRIVAL OF ASSESSMENT TEAM EACH DAY OF CART. MAKE SURE THAT THE TAG OUT OF ONE SYSTEM DOES NOT INTERFERE WITH THE CONDUCT OF ANOTHER CHECK.
F. LOCATE THE EOOW AND HOT CHECK COORDINATOR IN A CENTRAL LOCATION TOGETHER. THE EOOW IS RESPONSIBLE FOR PLANT CONTROL, THE HOT CHECK COORDINATOR TRACKS ALL CHECKS IN PROGRESS, KEEPS THE HOT CHECK PROCESS MOVING, DECONFLICTS ANY PROBLEMS AREAS, NOTIFIES THE CHAIN OF COMMAND OF ANY MAJOR PROBLEMS AND ENSURES REPAIR TEAM LEADER IS NOTIFIED FOR QUICK TURNAROUND OF DISCREPANCIES.
G. DESIGNATE A REPAIR TEAM TO HANDLE ISSUES WHICH MAY ARISE FROM THE HOT CHECKS. THE TEAM LEADER SHOULD BE FAMILIAR WITH PLANT OPERATIONS AND WHICH PERSONNEL/RATING SHOULD BE ASSIGNED TO WHICH TASK. THE TEAM LEADER SHOULD COMMUNICATE FREQUENTLY WITH THE HOT CHECK COORDINATOR AND KEEP THEM APPRISED OF MATERIAL DISCREPANCY RESOLUTION.
2. THIS LIST IS NOT MEANT TO BE ALL ENCOMPASSING, JUST A FEW QUICK REMINDERS OF WHAT HAS HELPED SHIP'S BE SUCCESSFUL IN THE CART II PROCESS.//
BT

TAB B

ENG READINESS STARTS BEFORE SRA